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Retained Ownership

Simulation and Financial Analyses Model



Abstract

Retained ownership (RO) is the process of maintaining ownership while production is continued by another producer. This technique is currently being used by many cattle producers. Cattle producers can gain expertise and economies of size and scale by using RO. As individual producers and fed cattle purchasers use greater volumes of cattle, RO also serves as a means for the small cattle producer to remain competitive. Cooperative organization is well suited to the employment of this production and marketing alternative.

A simulation model has been developed which enables the analyses of cooperative retained ownership. The model requires some production data to be input according to expected performance. Performance is simulated and results are produced in tabular form. The analyses performed by the model yield inventory flow analyses as well as financial statements for 1 fiscal year with data presented on a quarterly basis.

Keywords: Retained ownership, Cattle production, Modeling, Feasibility

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Preface

This is a special report outlining cooperative application of a current production and/or marketing alternative for cattle in the feedlot. This report resulted from cooperative interest and industry adoption of retained ownership of cattle.

This report applies cooperative principles for the consideration of retaining ownership of cattle in the feedlot. The simulation model constructed for this purpose requires little computer knowledge, but provides various production and financial analyses. The analyses obtained from running the simulation model enable interested member producers or cooperative boards to consider retained ownership possibilities and to examine projected financial results.

This report provides a description and user manual for a model simulating retained ownership of cattle in the feedlot. Explanations of the analyses produced by the model also are given. An example simulation for 1991 is included as an appendix.

Mention of Lotus or BLP88 software in this report does not constitute Government endorsement of the firm or its products.

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Highlights

Retained ownership programs are well suited to cooperative organization. This is especially true when livestock are pooled as well as services negotiated for members. Retained ownership can be an alternative for cooperatives to offer their cattle producing members.

The model incorporates spreadsheets where key production data are input and analyses are performed. A linear programming model assembles the data and performs the simulation. The analyses produced may be used by members and cooperative administrators when considering the feasibility of retained ownership.

Other significant features:

- Model is compatible with IBM PC compatible computers.
- Users are not required to do any programming — only to key in production data.
- Production data are entered into a spreadsheet in tabular format.
- Analyses consider up to 6 member deliveries or 6 pools of cattle for each quarter of the fiscal year.
- Production data and administrative decisions are easily changed so that alternatives can be compared.
- Straightforward analyses are compiled in tabular format.
- Results can be used for both projection and monitoring purposes.

Retained Ownership: Simulation and Financial Analyses Model

T. Fred White, Jr.,
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OVERVIEW

Both concentration and a changing marketing system are forcing cattle producers to review their positions and marketing alternatives. The cattle industry is becoming increasingly concentrated at all stages of production. This is especially true at the packer and feeding stages. Livestock marketing channels also are changing. Terminal and single agent auctions, once the primary market for fed slaughter and feeder cattle, are now losing share to direct marketing alternatives. Cattle marketing alternatives have decreased because the number of terminal markets are declining and local auctions enter and exit frequently. Along with a decreasing number of public markets, the number of prospective buyers for cattle has also declined.

Cattle producers must keep pace with industry changes to remain viable. Increased concentration in the cattle feeding and slaughtering industries has resulted in greater economies of size and scale. Also, technological changes are more easily accessible or affordable for larger producers than for smaller ones. Feed procurement, feed formulation technology, and animal procurement costs have all benefited these larger, more concentrated cattle feeding operations.

Cattle Feeding Industry

Competition with larger, more cost effective and efficient cattle producers has forced some smaller cattle producers out of business. The small

farmer-feeder of the past used cattle feeding as a route to add more value to cattle on-the-farm and/or to provide an alternative market for grain production, labor, and expertise. These small producers (usually finishing less than 100 head per year) are being absorbed and are disappearing.

Some of the small farmer-feeders not able to compete have continued to raise cattle but not to finish them in their feedlots. Cattle backgrounding is performed by many of those still remaining in business. Backgrounding is the process of assembling a group of cattle, generally left on grass, with or without additional supplement, until they are ready to enter the feedlot. Several factors determine when the cattle are "ready" to enter the feedlot, but maturity and weight are two primary factors which act as an upper limit for when they must be moved from grass to feedlot production. Lack of available forage, and consequently cheap gains, is also a common reason cattle backgrounders will move cattle into the feedlot.

Retained ownership is an alternative for cattle backgrounders, which offers additional marketing and production alternatives beyond marketing the cattle when they are ready for feedlot finishing. Retained ownership is the process of maintaining ownership while production is continued by another producer. Cost-effective and efficiency advantages of larger cattle feeders can be achieved by cattle backgrounders when using retained ownership. Retained ownership arrangements usually include contracting with feedlot operators for both fattening and marketing cattle. Therefore, the marketing expertise and connections of these large producers also are realized by the smaller cattle backgrounders using retained ownership. Retained ownership arrangements also can be used to alleviate management and facility limitations.

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Retained ownership is not without drawbacks. The producer still has some production risks and price uncertainty. These can be minimized by contracting only with reputable feeders and hedging cattle through forward contracts or futures markets. In exchange for these added risks beyond backgrounding, the producer has prospects of greater net returns from the value added during contract production.

Cooperative structures can provide methods for producers to use retained ownership arrangements. Cooperative pooling is one method used for small producers (having less than 80 head ready for finishing) in order to reap the same benefits of many backgrounders using retained ownership. Larger producers also can coordinate with each other to better negotiate terms for retained ownership arrangements with feeders. Cooperatives therefore can provide a method for producers to bridge the concentration gap while gaining access to increased production and marketing technology.

Cooperative Feasibility

Production planning and feasibility analyses are essential when considering business ventures. This is especially true for cooperatives where decisions are made for several members. Production planning and feasibility determination are probably the two hardest tasks for many cattlemen. Partial enterprise budgets and production simulation programs are a means to discover opportunities and to decrease management errors.

The goal for this report is to present a management and financial analyses tool for retained ownership. This tool is designed for cooperatives or groups considering a cooperative. The model is for use both before and during production. It enables the evaluation of slaughter cattle production and cooperative administration alternatives under retained ownership contracts.

Using the Analyses Summaries

The simulation program provides several statements about the feasibility of using retained ownership programs for members. A cash flow

statement, operating statement, and balance sheet are provided to determine feasibility. An accounting, administrative costs, and depreciation schedule is used to consider cooperative administrative alternatives. An inventory flow summary also is provided so that scheduling can be incorporated into cooperative decisions.

These statements, in total, provide the necessary summaries so that the cooperative's board of directors may make decisions on the most profitable and viable methods of production. These statements also could be easily incorporated into a presentation for potential lenders or cooperative members. Agricultural Cooperative Service (ACS) is available to assist interested groups and current cooperatives in using this tool for consideration, implementation, and monitoring of production. Custom applications also may be requested.

The automation provided by this system has the potential to reduce management and staff efforts necessary to produce reports for members. These reports also facilitate the preparation of quarterly and fiscal year-end statements on cattle retained ownership production.

Analytical tools can be extracted from this package to provide individual member and production quarter comparisons. These data may be used by cooperatives to aid production planning or dividend distribution. The advanced features that provide this information have not been detailed in this manual though they are available on request.

Objectives

The objectives of this project were to:

1. Describe a production simulation model developed to consider the retained ownership of feedlot cattle from a cooperative approach,
2. Demonstrate that this model could easily be used with minimum training and supervision,
3. Outline the production planning flexibility of the model, and
4. Illustrate the indepth results, analyses, and generated reports from the simulation model,

Modeling System Overview

The modeling system incorporates production parameters, accounting information, and administrative costs associated with retained ownership. The data are designed to represent a cooperative business organization where members' livestock are pooled by sex each quarter of one complete fiscal year. Analyses statements generated from the simulation model enable the evaluation of the feasibility of cooperative retained ownership.

The cash flow statement, operating statement, and balance sheet provide necessary financial data. The accounting, administrative costs, and depreciation schedules offer cooperative administrative alternatives for conducting business with members and negotiations with feeding contractors. The inventory flow analyses enable the livestock flow to be seen on a quarterly basis. These summaries enable the cooperative to consider alternatives in order to make decisions on the most profitable and feasible methods of production and administration. These summaries also could be easily incorporated into presentations for potential lenders or members of the cooperative.

The modeling system uses Lotus 123, a spreadsheet program, and BLP88, a linear programming package. The diskette supplied with this manual includes 3 Lotus 123 compatible spreadsheet files. Each file has a unique application. These files serve 3 functions: 1) input production data and assemble the problem, 2) act as a template for report generation, and 3) serve as the report generator.

Lotus 123 software is used both before and after problem solution by the linear programming software. Initially, production data are input into a Lotus spreadsheet, and finally reports are generated and results considered. The linear programming software (BLP88) serves as an intermediate between these two steps by solving the problem and then creating the final spreadsheet. A schematic of the interactions between the spreadsheets and linear programming software is provided in figure 1.

Software and Hardware Requirements

Two software packages, Lotus 123 (version 2.X) and BLP88, are required for the simulation program (fig. 1). Lotus 123 version 3.0 or higher, however, is not compatible with the linear programming software used. The linear programming software needed is BLP88 version 7 or higher. Both of these are copyrighted and must be purchased from a software vendor.

Hardware constraints are set by the requirements of Lotus 123 and BLP88 program packages. The simulation program requires IBM PC compatibility. Suggested hardware requirements are:

1. IBM "PC" compatibility,
2. 640 kilobytes of available RAM,
3. A high-density floppy disk drive and/or hard drive,
4. Math co-processor chip, and
5. An 80- or 136- column printer.

Program Files Used by the Simulation System

The simulation diskette contains the three spreadsheet files necessary for system usage. The supplied files are as follows:

- 1) PROBLEM1.WK1—A Lotus 123 spreadsheet file where production data are input and/or edited.
- 2) TEMPLATE.WK1—A Lotus 123 spreadsheet file used as a template for the solution data.
- 3) SOLUTION.WK1—A Lotus 123 spreadsheet that provides the solution data analyses summaries, and financial statements.

The three spreadsheet files and the two software packages used by this system do not have to be on the same diskette or same hard-drive directory. Using BLP88, however, is less complicated when the BLP88 software and the three program files are in the same directory. It is not necessary that the Lotus package also be in that directory.

Computation time can be reduced using a hard drive. This manuscript assumes that the BLP88 system and the files provided on the simulation diskette are on the same diskette or hard-drive directory.

Users should make a backup of the original diskette supplied. The original copy should be filed, and the backup copy should be used for simulation purposes. Copy the BLP88.EXE file onto the diskette or directory to be used for simulation. Consult a Disk Operating System (DOS) manual for instructions on copying diskettes.

MODELING SYSTEM USAGE

The modeling system is most easily described by three steps: 1) problem definition, 2) problem solution, and 3) review, interpretation, and usage of Solution Data. The problem definition step enables the user to view production specifics in terms of constraints and input data. The problem solution step assembles the data, solves the problem, and creates the resulting summaries and financial statements. The final step provides the information base for the cooperative solution data and the consideration of some administrative variables. Reference figure 1 to review the information flow of the modeling system.

The Lotus 123 spreadsheet containing retained ownership production data is provided on the simulation diskette as "PROBLEM1.WK1". To begin the Cattle Retained Ownership Simulation System (CROSS), initiate Lotus 123 and retrieve the file "PROBLEM1.WK1".²

Accessing the Problem

When the spreadsheet "PROBLEM1.WK1" is retrieved, a message screen is displayed and a custom menu is provided at the top of the screen. The message screen lists the name of the spreadsheet and some notes for the user (fig. 2). The main custom menu behaves just like a regular Lotus 123 menu. Descriptions of the menu choices are provided immediately below as each selection is highlighted by the cursor. This main menu can be recalled at any time while the spreadsheet is in the "ready" mode by pressing the ALTERNATE and T

keys simultaneously.³ The main and other custom menus used in the spreadsheet can be removed by striking the escape (ESC) key just like the removal of any other Lotus menu. The main menu flow and a description of each choice is provided in figure 3.

The main menu has been designed to enable the user to work more efficiently, retrieve basic information in a more straightforward manner, and print problem descriptions and specifics from tabular formats.

From the main menu, the Selected Coefficient Adjustment Table (SCAT) option can be selected to review and edit production data. The SCAT contains production estimates and input relationships. In the SCAT, data can be highlighted with the cursor and directly replaced with new information. Refer to the appendix for an illustration of the SCAT used in the example problem.

The user may edit any cell in the SCAT displayed in green (when using color monitors) or bold (when using monochrome monitors).⁴ Users not familiar with linear programming and the use of linear programming tableaus should not make changes in the spreadsheet except those displayed in green (bold). The few entries that are not displayed in green (bold) should not be changed because they are calculated as a result of the production data. The simulation may not perform properly if these calculated entries (those not displayed in green or bold) are changed from a formula to a number and the PROBLEM1.WK1 spreadsheet is saved.

When considering additional production strategies, always begin with a copy of the original PROBLEM1.WK1 spreadsheet supplied on the demonstration disk. This will ensure that no neces-

² For assistance using the Lotus 123 system, refer to the Lotus 123 manual supplied with that software.

³ The "mode" of spreadsheet operation is indicated by Lotus in the upper-right corner of the spreadsheet. If not in the "ready" mode, the escape key may be pressed to return the spreadsheet to the "ready" mode.

⁴ Certain cells are formatted to be percentages (i.e., noted by a "P(2)" between the cell address and value) and thus should be entered as a percentage—e.g., input 0.10 for a display of 10 percent.

sary formulas were inadvertently altered by prior simulations. If any changes are made in the SCAT, save the spreadsheet (PROBLEM1.WK1) under its original name before proceeding further.⁵

Problem Solution

The BLP88 program solves the production scenario defined by the data in the "PROBLEM1.WK1" spreadsheet by a technique known as linear programming. The problem solution process is composed of two steps: 1) The BLP88 software assembles the production data from the PROBLEM1.WK1 spreadsheet into the BLP88 package format, and 2) the BLP88 software then performs the necessary calculations to solve the problem.

The linear programming package translates the production data found in the PROBLEM1.WK1 file into mathematical equations. Linear programming simultaneously solves these equations in order to attain the maximum net returns or minimum production costs—given production constraints. Linear programming provides estimated production results, which are interpreted directly and by the analyses of inferred values (sensitivity values, shadow prices, etc.).⁶

For the general user, it is not important to know how linear programming works. It is important, however, to know information needed by this system and what the resulting data mean.

This report provides only the necessary steps when using BLP88 for problem solution.⁷ A step-wise diagram of the BLP88 System menu selections used by CROSS are provided in figure 4. Figure 4

should be used as a reference when proceeding through the step-by-step directions.

Translating the Production Data Into Mathematical Equations—Assembling the Problem

The problem must be assembled from the PROBLEM1.WK1 spreadsheet by the BLP88 system. To begin operation of the BLP88 system, complete the following steps (refer to fig. 4 for a diagram of BLP88 menu usage):⁸

1. Change the default prompt on the computer to the drive or directory that contains the spreadsheets included on the simulation disk and the BLP88 system files. If the system is to be run from a floppy drive, place the CROSS diskette with the BLP88.EXE file (copied from the BLP88 system diskette) into the default floppy drive.

2. Start the BLP88 system by typing BLP88 at the prompt.

3. Move the cursor down one movement to highlight "PRINTER", if no printer is activated (installed and turned on) for your PC, and replace this entry by typing CON; otherwise proceed to step 4.

4. Begin BLP88 execution by highlighting the word BEGIN with the cursor and striking enter.

5. Enter the setup mode by Striking F1 function key.

6. Define a new problem by striking F2 function key.

7. Answer the prompts:⁹

Problem Name: PROBLEM1

Problem Type: MAX

⁵ Changes made can be saved by accessing the custom menu, ALT-T Keys, and choosing the THROUGH option.

⁶ Direct results are provided by the levels of production and input usage. Inferred values relate marginal changes in returns and costs associated with changes in the resultant production levels.

⁷ The BLP88 manual provides a comprehensive description of the linear programming software and its use.

⁸ Underlined information is typed by the user during simulation.

⁹ This set of prompts asks for features and dimensions of the constructed problem. Maximum returns result when the problem type is entered as "MAX". The number of constraints represent conditions placed on the problem. Non-slack variables are possible actions taken by the cooperative—e.g., receiving cattle requires payment for cattle, receipt of nomination fees, and the supply of one head of livestock.

Number of Constraints: 163

Number of Non-slack Variables: 205

8. Assemble (read) the problem with the BLP88 system by striking F9 function key, and

9. Answer the prompts:

Name of file: PROBLEM1

File format used by: 2 (Strike 2 for *.wk1 format or 1 for *.wks format)

The problem assembly/reading of the spreadsheet should take a few minutes—commensurate with computing speed. The problem has been assembled when the problem name (PROBLEM1) is highlighted on the upper-left corner of the screen.

Viewing and Editing the Problem Within the BLP88 System

Once the problem has been loaded, it may be viewed or solved in the setup mode. Because the problem will be displayed in BLP88 format, only those with a thorough understanding of linear programming and with experience editing linear programming tableaux should consider editing here. The occasional or unfamiliar user should make any production data changes in the Lotus spreadsheet PROBLEM1.WK1 before importing the problem into the BLP88 system. The problem can be displayed as follows:

1. Display the problem by striking F3 function key from the setup menu,

2. Strike the *Page Down* key to scroll down, *Page Up* key to scroll up, *Delete* key to scroll right, and *Insert* key to scroll left,

3. Return to the setup menu, after viewing the problem in BLP88 format, by striking F10 function key, and

4. Return to the main menu by again striking F10 function key.

Solving the Assembled Problem The problem may be solved from the solution mode using the solve option (F2 function key) of the initial menu. To solve the assembled problem, complete the following steps:

1. Choose the solve option from the BLP88 main menu by striking the F2 function key,

2. Execute the solution process by striking Enter, and

3. Continue the solution process until a message appears at the top left of the screen stating optimality.

A message may appear at the bottom of the screen stating “primal degenerate problem”. This warning/error simply means that other activities could enter the solution without influencing (decreasing or increasing) the level of net returns or changing production decisions.

The heading on the screen labeled OBJECTIVE does not apply to the cooperative because it only accounts for a portion of cattle production costs, and it does not account for the value of cattle remaining in the feedlot. The results of the program should be viewed and considered from the spreadsheet containing financial statements and summary reports.

Custom Report Generation

Custom reports may be generated by using a spreadsheet template (TEMPLATE.WK1) for writing the solution to a spreadsheet designated for the LP output (SOLUTION.WK1). The target spreadsheet (one which accepts solution output from the BLP88 system) is provided as SOLUTION.WK1. This spreadsheet must be present, though it may be blank initially. This spreadsheet will be replaced each time a new solution is written; however, the template will not be altered when a new solution is written.

The custom reports both enable the user to view results and allow the use of production results in other applications after copying them from the SOLUTION.WK1 spreadsheet. To use the custom report generating capabilities, complete the following steps:

1. Access the output menu after solution, by striking F8 function key.

2. Write the solution to the supplied Lotus spreadsheet by striking F9 function key.

3. Answer the prompts as follows:

Name of template file: TEMPLATE

Name of target worksheet: SOLUTION

File format used by: 2 (Strike 2 for *.wk1 format or 1 for *.wks format)

These steps cause the BLP88 system to write the solution data to the SOLUTION.WK1 spreadsheet while using the template, TEMPLATE.WK1, as a model. BLP88 processes the SOLUTION.WK1 spreadsheet by making it a copy of the TEMPLATE.WK1 spreadsheet and then overwriting/revising the data entries. Consider only the updated data in the SOLUTION.WK1 spreadsheet because the BLP88 system does not update the original data found in the template spreadsheet TEMPLATE.WK1.

The custom reports are contained in the SOLUTION.WK1 spreadsheet. After revising the SOLUTION.WK1 spreadsheet, thereby generating these custom reports, exit the BLP88 system by striking repeatedly the *F10* function key until a prompt asks if the user would like to exit the program. At this prompt, reply by typing *Y*.

Review, Interpretation, and Use of Solution Data

The solution may be viewed or used for further analysis from the solution spreadsheet—SOLUTION.WK1. Again, the data found in the spreadsheet TEMPLATE.WK1 *are not updated* as custom reports are generated; therefore, consider only that data provided in the spreadsheet SOLUTION.WK1.

Lotus 123 software is used to peruse, analyze, and extract the results found in the solution spreadsheet. To view or use the results, first start the Lotus 123 system and then retrieve the new SOLUTION.WK1 spreadsheet.

Like the problem spreadsheet used earlier, the SOLUTION.WK1 spreadsheet has an opening information screen and custom menus. The custom menus perform and react similar to Lotus menus—refer back to the discussion on the custom menus found in PROBLEM1.WK1. The initial screen seen in the SOLUTION.WK1 spreadsheet is provided in figure 5. The custom menu branches in this spreadsheet are provided in figure 6.

The initial custom menu allows the user to set the fiscal year (FY) for which the results apply. The conditional menu, automatically appearing after a FY choice has been made, allows the user to identi-

fy the FY as initial or continuing. If the CONTINUING selection is made, the user is prompted to provide beginning data to be used by the financial statements. After the INITIAL selection is chosen, or the beginning financial data has been entered (as a result of the CONTINUING selection), go to the main menu. The main menu allows the user to access other custom menus used by the system.

The update and summary custom menus can be used to view the summaries and analyses created from the solution results. The PRINT custom menu can be used to print the summaries and financial statements. The BLP88 system reports also may be printed via the print menu using the FULL option. The interpretation of the BLP88 results are aided in part by the column headings though the user should research and fully understand the BLP88-generated results before making any inferences. The summary reports and analyses selected from the update and summary menus printed via the print menu, provide a more user-friendly presentation of these results and/or calculated data.

REPORT Option Eight custom reports are generated by the SOLUTION.WK1 spreadsheet. Four of these allow user editing. The initial balances report is accessed only if the data are for a continuing year (result of the CONTINUING selection of the conditional menu). Three other summaries allow user editing: accounting data (fig. 8), administrative costs (fig. 9), and depreciation schedule (fig. 10). Editing is accomplished via the UPDATE selection of the main menu. User edits should only be made to those cells displayed in green (or bold) as described for the production data, PROBLEM1.WK1, spreadsheet.

The four remaining reports do not allow user editing. They are: inventory analyses (fig. 11), cash flow (fig. 12), operating statement (fig. 13), and balance sheet (fig. 14). These reports may be accessed using the SUMMARY option of the main menu. Examples and particulars of these custom reports are found in the appendix.

Initial Balance Summary The initial balance summary enables the user to input the ending balances of the previous fiscal year. The necessary

balances are provided from the balance sheet's fourth quarter values for the prior fiscal year. This summary is accessed automatically when the CONTINUING selection is made from the conditional menu. Initially, all balances in this summary are set to zero (0) as if it were a beginning fiscal year. This report may be printed using the print menu.

Accounting Data Summary The accounting data summary provides basic assumptions to generate the financial statements. Incomes and expenses, separate from cattle sales and production costs, are in this summary. Many of the values, those shown in green or bold, may be modified by the user so that changes in assumptions can be evaluated. When values in this report are edited, the financial statements are recalculated to provide the result of the change. This is especially helpful when alternate borrowing and cooperative stock strategies are considered.

Administrative Costs Summary The administrative costs summary contains basic data on the fixed and administrative costs of operating the cooperative. The costs shown in green or bold may be changed to model an existing cooperative or to evaluate the results of changing operations. As the user edits administrative costs, the financial statements are recalculated accordingly.

Depreciation Schedule The depreciation schedule provides cost, ownership, and depreciation data for the cooperative's fixed assets. The user may add or delete assets in this table. The table calculates depreciation on a straight-line method that assumes 10 years of useful life. If successive years are analyzed, the depreciation schedule must be edited to accurately reflect the status of assets in this section.

Cash Flow Statement The cash flow statement is a financial analysis tool that offers cash receipt and payment totals by quarters. This statement enables the user to evaluate proceeds, payments, and loans. Some of the accounting data and

administrative costs summaries are used as inputs for the cash flow statement.

Operating Statement The operating statement provides a "fiscal year" picture of the cooperative's operating results. In this summary, net income is calculated and disbursed. Much of the operating statement data is found in the cash flow statement as a result of fiscal year totals. The data in the accounting data summaries dictate the policy of net income distribution seen in the operating statement.

Balance Sheet The balance sheet provides a synopsis of the financial position of the cooperative at a given time—the solvency of the cooperative. Information in this table primarily comes from the cooperative's financial records at the end of the year.

Inventory Summary The inventory summary provides a comparison of beginning and ending cattle inventories, in addition to inventory flow. The inventory summary enables the user to view the returns, costs, and margins provided by cattle sales.

SUMMARY

This manuscript provides cooperatives with an introduction to a modeling tool for the evaluation of retained ownership programs for cattle in feedlots. The simulation system was explained and demonstrated where information was supplied to the reader so that the reader could execute the program while reading the text or afterward.

The simulation system is easily adapted according to production parameters and administrative policies of cooperatives. The data can easily be edited and run for retained ownership consideration. The most important aspect of implementing the system, however, is using realistic data. The system provides summarized analyses which enable straightforward results.

Data in the summaries of the SOLUTION.WK1 spreadsheet may be used for planning or monitoring. Solution data may be used

for reports or for evaluation purposes when comparisons are made among two or more simulations (problem definitions).

The appendix contains additional information and an example model simulation. The program has more capabilities than outlined in this report. They are reserved, however, for only the experienced or frequent user with consultation from ACS. The simulation system has great flexibility in application, and assistance is available from USDA's ACS for custom applications to specific cooperatives.

For further information contact Fred White (202-720-5390) or David Chesnick (202-690-0433), Agricultural Cooperative Service, P. O. Box 96576, Washington, DC 20090-6576.

APPENDIX

Data Source and Input for the Example Problem

This appendix is intended as an outline of a sample problem. Data sources and input cells are described and hard copies of the analyses summaries are provided.

For the reader interested in using the model with other known, or updated, data, the programmer can substitute like data for those used in the example while following this guide. Data are keyed in only for those unprotected cells displayed green or bold to avoid the possibility of erasing formulas needed for the program execution.

Production Parameters

All production parameters are input into the PROBLEM1.WK1 spreadsheet. This spreadsheet creates the linear programming problem. Here, the Selected Coefficient Adjustment Table (SCAT) is found and the production data are input. Figure 7 illustrates the SCAT in the spreadsheet. Values may be entered by the user in the shaded (unprotected) cells.

Data Sources Three primary sources were used for those data not estimated by the authors. USDA Agricultural Marketing Service (AMS) source data

are used for livestock and carcass prices and dressing percentages. USDA Economic Research Service (ERS) data are used for feed prices and production costs. Lastly, data from the periodical Feedstuffs (FEEDSTUFFS) are used for cattle weights, average daily gain, feed conversion, and death loss percentages. Each of these three data sources were obtained as monthly averages and then converted into simple quarterly averages for modeling purposes. Data was used for calendar year 1990.

Data Entry The first step in entering the problem's data is to begin the PROBLEM.WK1 spreadsheet. The SCAT option should be chosen from the initial custom menu. This choice will provide access to the SCAT where production data are input.

Initial Entries-Fiscal Year and Inventory In the SCAT the fiscal year to be analyzed is input into cell HV7. A range of cells exists for beginning inventory if the problem is for a successive fiscal year—IA9, IA10, IA13, and IA14. If no initial inventory of cattle is held by the cooperative at the beginning of the analyzed fiscal year, the values in these cells should be zero. If there are beginning inventories of cattle in the retained ownership program, then the data concerning the weights and head of cattle should be keyed in.

Member Deliveries The beginning portion of the SCAT holds quarterly data for member deliveries of cattle for retained ownership. Data were keyed in this initial section for delivered steer weights at columns HU through HZ in rows 9, 22, 35, and 48 for quarter I through IV, respectively. Delivered weights for heifers were input in rows 10, 23, 36, and 49 in a likewise manner.

The programmer assumed a \$10 nomination fee, per head, per quarter in column HU, rows 12, 25, 38, and 51. The programmer also assumed each of the six members would deliver 50 head of steers and 25 head of heifers each quarter (ranges: HU13..HZ14, HU26..HZ27, HU39..HZ40, and HU52..HZ53).

A payment of 1 percent of the value of the feeder cattle was assumed to be made to the mem-

ber by the cooperative upon cattle delivery each quarter (column HU, rows 16, 29, 42, and 54). AMS data for the Amarillo, TX, auction was input for cattle prices at delivery in columns HU through HZ in rows 17, 30, 43, and 56 for steers and in rows immediately below for heifers.

Finished Cattle and Carcass Prices Prices for finished cattle and carcasses immediately follow the cattle delivery information. The AMS source was used for these data. Prices for Choice (Choice steers 11-13 cwt) and Select (Choice steers 10-11 cwt) steers were quoted from Texas-New Mexico direct sales. Heifer prices also came from the same report—prices quoted in the 10-12 cwt category represented Choice and those for 9-10 cwt were used for Select.

Omaha Choice and Select carcass prices were used until their culmination on June 30, 1990. After carcass prices were no longer quoted by AMS, the carcass equivalent index (CEI) was used. Choice prices for steers were input at column HU in rows 60, 65, 70, and 75. Select prices were input in the same rows but in column HV.

The corresponding rows in column HW contain pencil shrink percentages used in combination with the quoted prices. For each of the four rows noted, heifer data are in the row immediately below steers and carcass data are in the second row below.

Rows 79 and 80 allow an imposed premium, above that actually quoted, for the production of Choice cattle and carcasses, respectively. The cell HY79 is a switch which determines whether premiums are awarded. An entry of "NO" does not issue premiums; however, an entry of "YES" will.

Marketing, Handling, and Veterinary Costs

Other miscellaneous production costs follow in rows 87 through 94. ERS cost of production values for commissions were used in row 87, vet and medicine charges in row 93, and shipping charges for row 94.

Production Parameters Drylot production data are provided for each of the sex-quarter drylot combinations in rows 98 through 105. Capacity limits are imputed in columns HU and HV. Zeros

appear for the lower limits in the example, and no entry is provided for maximum capacity—the default maximum capacity limit is the number of cattle delivered by members.

Data for average daily gain (ADG) are input in column HW using FEEDSTUFF source data. The maximum gains per quarter are calculated in column HX as the product of the ADG and the length of the feeding period (quarter).

Feed Costs Feed costs per pound of gain are calculated as the product of ADG, feed conversion (as fed basis), and feed costs in column HY. Feed costs (ton basis) are calculated quarterly in column HZ as a result of individual feed ingredient costs. Feed conversion provided in column IA is an estimate from the FEEDSTUFF data after conversion from a dry matter basis to an as fed basis.

Management Charges Yardage fees are assessed by providing a response of "YES" in cell HU107. Estimated yardage fees are provided in row 109 by quarter in columns HU through HX. Yardage fees are not assessed in this simulation because feed costs already have a \$10 per ton markup fee included, which represents the return to the feedlot operator for feeding and managing the cattle. The length of the feeding period is provided by quarter in row 110.

Performance Data The estimated grading percentages for live steers, live heifers, and carcasses are found in rows 113 through 115. These percentages affect the proportion of sales which qualify for the "Choice" versus "Select" prices. The carcass percentages apply only when carcass sales are made.

Target "out" weights from FEEDSTUFF data are used for steers and heifers in rows 117 and 118. A response of "YES" in cell HU120 requires that all sales are made on a carcass basis where a response of "NO" provides only live sales. When carcass sales are dictated (cell HU120), the estimated dressing percentages are used for steers and heifers from rows 124 and 125, respectively.

Death Losses Death loss percentages for livestock, found in rows 128 and 129 for steers and heifers, respectively, are used from FEEDSTUFF data. An estimate of the average feeding period during which a "death loss" calf stays in the drylot before dying is provided in cell HU131. Cell HU132 provides the percentage of the death loss calf's purchase price assessed at its death. The range HU136 through HX146 contains the worksheet for calculating death loss costs and requires no user input.

Cooperative Acceptance of Deliveries Rows 149 and 150 offer limits on the percentage of delivered cattle which are accepted by the cooperative. This limit is imposed as 100 percent.

Feed Ingredient Costs of Deliveries The final section of the SCAT calculates diet costs. Here the user may input ingredient costs for milo, corn, cottonseed meal, and alfalfa hay in rows 154 through 157, respectively, by quarter. The calculated cost per ton for the diets is calculated in row 159. A markup fee of \$10 per ton was used for each quarter as found in row 161. The final row (Row 166) allows the user to alter the ingredient mix of the diet on a ratio, or parts, basis.

Remember, the SCAT allows user input data only in the cells displayed in green (or bold on monochrome monitors). Altering other cells may endanger the results of the problem since many of these cells contain formulas which calculate coefficients as a result of the input data. Once all data has been edited in the SCAT, the PROBLEM1.WK1 spreadsheet should be saved for problem solution. No data editing is required to obtain the results provided as the example in this paper.

Financial Parameters

The financial parameters are input after the problem has been solved and the solution has been written to the SOLUTION.WK1 spreadsheet. This program is not an accounting package, but is a tool for projections of cattle operations; therefore the accounting techniques are simplified.

To avoid the double entry system of accounting, this system assumes that accounts are settled at the end of each quarter. Cattle loans are settled when the cattle are sold. To complete the financial analyses, load the SOLUTION.WK1 file into Lotus.

The program will prompt you for information. Financial statements, which include the statement of cash flow (fig. 12), operating statement (fig. 13), and balance sheet (fig. 14), are in this appendix to illustrate these summaries. As before, the shaded regions are areas that allow input values. If the values are not shaded, then do not type over them. Follow these steps after the SOLUTION.WK1 file has been loaded into Lotus:

- 1) Choose the fiscal year to be analyzed.
- 2) Choose INITIAL if this is the first year of business or choose CONTINUING if the operation is ongoing.
- 3) If this is a continuing operation, the program will ask for the prior balances of specific balance sheet accounts. If a mistake is made on the inputs at this stage *the spreadsheet will need to be rebooted*. Once these prior balances have been entered, the custom menu will appear.

If this is the initial year of business, the main custom menu will appear.

- 4) Before the summary of the financial statements can be viewed with any meaning, other data will need to be input. To do this, choose the UPDATE option from the custom menu.

To update the financial information, the UPDATE option should be selected from the main custom menu. This option enables the user to modify (custom tailor) cooperative data. Three schedules are modified with this menu: accounting, administrative, and depreciation.

Accounting Data Updates The accounting data should be input for each quarter (see figure 8). Descriptions for selected accounting revenues/expenses and other important information concerning the accounting data follow.

Other Sales These are sales resulting from cattle production that are not provided directly as "cattle sales". Two examples are proceeds from renderers for dead animals and sales of inferior cattle before

finishing (bullers, cripples, etc...). In our example there were no other sales.

Other Income This is income from other sources not related to cattle operations. It includes, but is not limited to, sales of other assets such as office equipment. Other income is assumed to be zero in our example.

Membership Fees These are paid to receive membership privileges. In the example, there are six members and each contributed \$1,000.

Other Disbursements These are expenses not attributed to the cattle operations or other expenses previously not taken into account.

Stocks Both preferred and common stock are other ways the cooperative can raise equity capital. Many cooperatives issue common stock as membership shares. Allocated equity is sometimes issued as preferred stock.

Per Unit Capital Retains per unit capital retains (P.U.R.) represent the amount of proceeds held by the cooperative for investment or administrative purposes. Often these funds are used to alleviate potential cash flow problems. The P.U.R. is based on a set amount (per head) basis. In the example, each member will pay \$5 per delivered head to use the cooperative.

Long-Term Debt Long-term debt provides additional sources of capital, which are usually used for investment purposes. These proceeds typically are not secured for day-to-day operations but for operations of a much grander scope such as the addition of new facilities or acquisition of assets that will be used for years in the future.

Interest Rates Interest rates for working loans, cattle loans, and long-term debt are obtained from local lending institutions. The rates must be imputed with a decimal. For example, 10 percent would need to be typed as “.10”.

Percentage of Loan Value This is the percentage of the delivered cattle's value that the lending institution will be willing to lend on cattle used as collateral.

Patronage Refund Cash This percentage of patronage refund allocation is paid out in cash to members at the end of the year.

Taxes The average tax rate, in the event that positive net income is retained by the cooperative at the end of the year, that will be applied. All remaining net income will be taxed at the same rate.

Dividends Paid The amount of dividends paid to all members is determined by the Board of Directors and in certain cases may be subject to local and/or Federal statutes.

Allocated Reserves These are net savings allocated to the members, but retained by the cooperative as equity investment. These values represent the dollar amount of member investment allocated for specific uses by the cooperative.

Interest Income Interest income is the balance of cash in the bank above the minimum set by the user. The minimum set by the user is input in the accounting summary. In our example, any amount over \$2,500 will receive 5.5 percent compounded quarterly.

Administrative Costs Updates The administrative costs section includes administration costs associated with operating the cooperative cattle portion of the business (see figure 9). Remember to input the values for each quarter.

The manager's responsibilities were assumed to include coordinating cattle deliveries, inspecting cattle nominations, ensuring payments to producers, and negotiating feeding contracts. An amount of 20 hours per month was assumed necessary for these duties.

The vehicle in this example is owned by the manager. The vehicle expenses were assumed to be \$0.25 per mile over 16,000 annual miles.

Legal fees are for initial setup of the cooperative and will not be charged in subsequent fiscal years. Accounting fees, however, are charged for quarterly reporting. The remaining administration costs are assumed to be self-explanatory.

Depreciation Schedule The depreciation schedule must be updated for each business year the model is run so that the financial statements will be correct across all fiscal years considered. The input information includes asset type, purchase price, and months owned in prior and current years (see figure 10). In the example, office equipment was purchased for \$4,250 at the beginning of the current fiscal year. If the equipment had been purchased previously (e.g., 2 years earlier), the column under PRIOR YRS would include 24 for the number of months held.

If assets are sold at some point during the fiscal year, the number of months the equipment will be used should be input here. For example, if the equipment will be sold beginning in the ninth month of the fiscal year, "9" would be typed here.

The schedule is based on a 10-year straight-line depreciation with no salvage value. For simplicity, all equipment is treated the same. For land purchases, all that is needed is the purchase price since land cannot be depreciated.

Other Statements

Three financial statements are generated from the results of the simulation. The Cash Flow statement provides detail on the operating income received and expenses paid, by quarter. The Operating Statement exhibits detail on the source of income and expenses incurred each quarter. The Balance Sheet provides a snapshot of the enterprise's assets, liabilities, and net worth.

A summary of cattle received and sold is provided as an inventory summary (see figure 11). This summary also shows those cattle, by sex, remaining as inventory at the end of the fiscal year.

This analysis affords an interpretation of cattle flow through the retained ownership system.

Example Summary

Data used and assumptions applied for the example problem have been outlined. Examples of the analyses described in this paper resulting from a complete simulation, from data input to report generation, have also been presented.

The resulting analyses provide information that relates only to the cattle retained ownership activities of a cooperative having six members who each deliver steers and heifers to the cooperative for retained ownership of cattle in the feedlot in an initial fiscal year.

This program can be modified by the user to consider varying alternatives for possible use by their cooperative. Alternatives can be custom designed to meet a cooperative's unique position and/or to consider different production or administrative alternatives.

ACS assistance is available for those users wishing more indepth analyses or different applications of this methodology.

Figure 1 - Software Interaction of the Modeling System

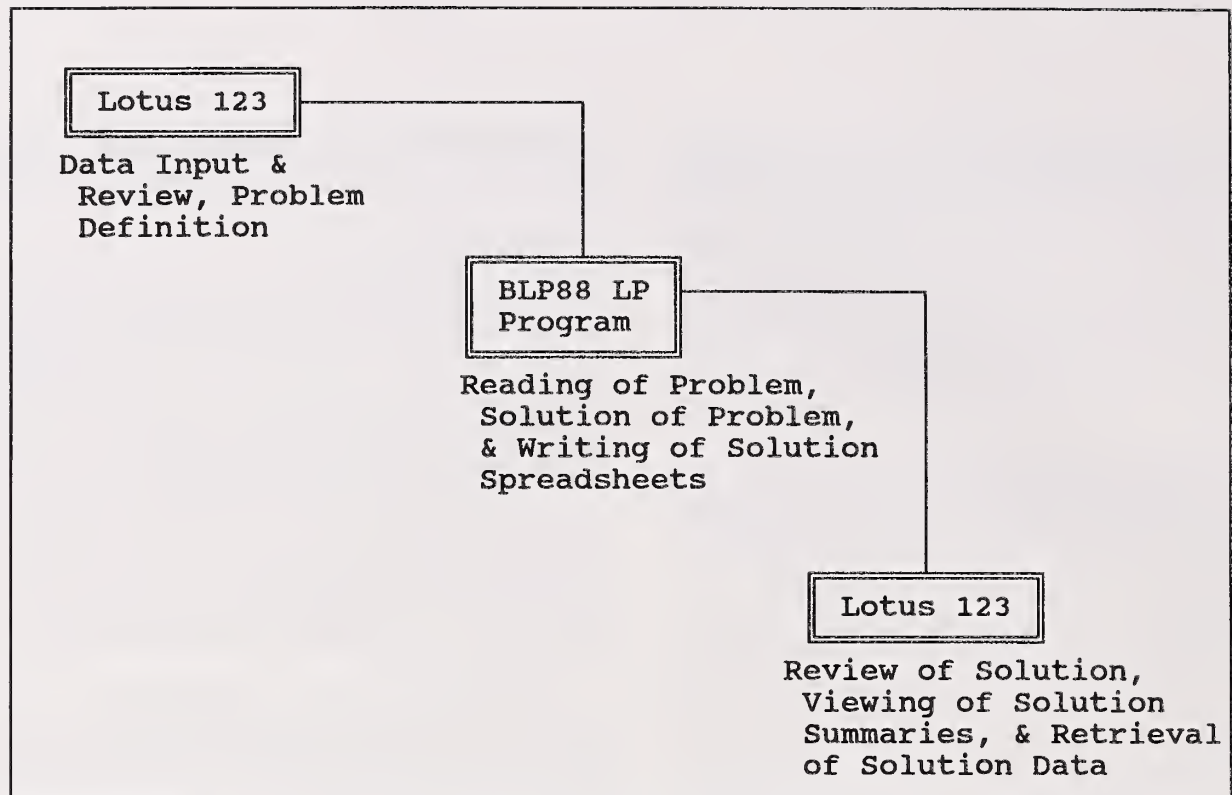


Figure 2 - Initial Message Screen for PROBLEM.WK1

[illegible]

Figure 3. Main Menu Flow and Selection Descriptions of the Spreadsheet
PROBLEM1.WK1

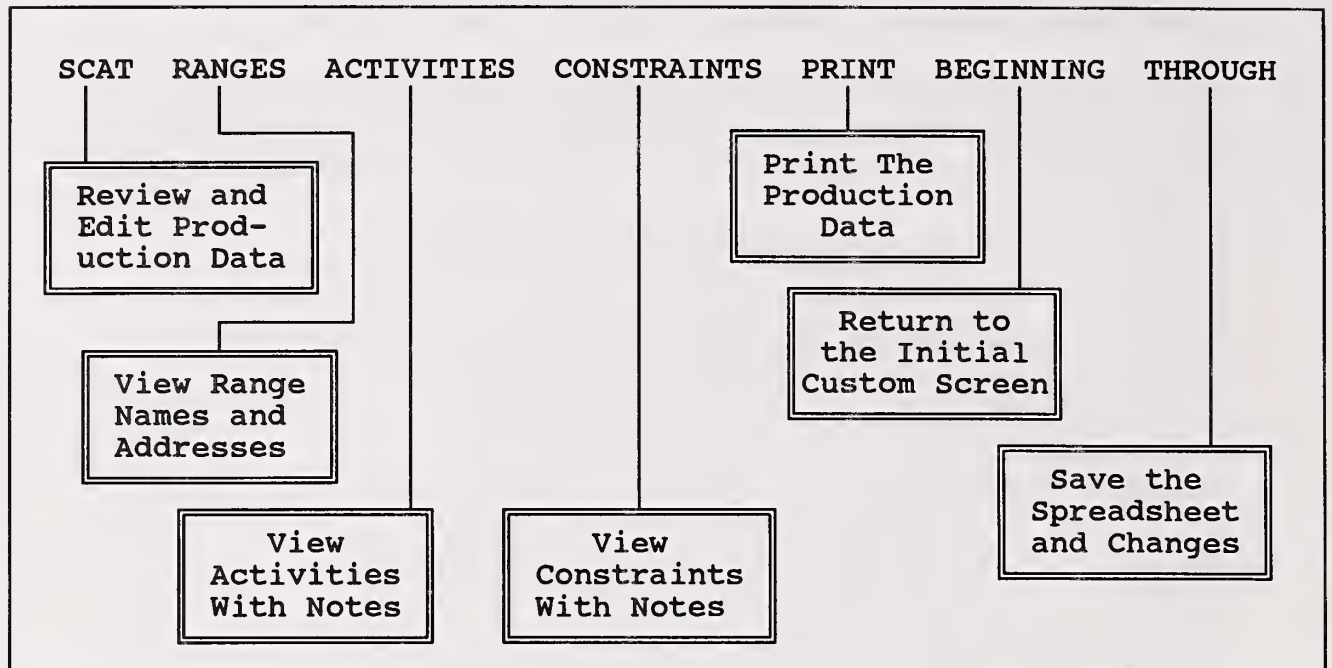


Figure 4 - Diagram of the BLP88 Software Menus

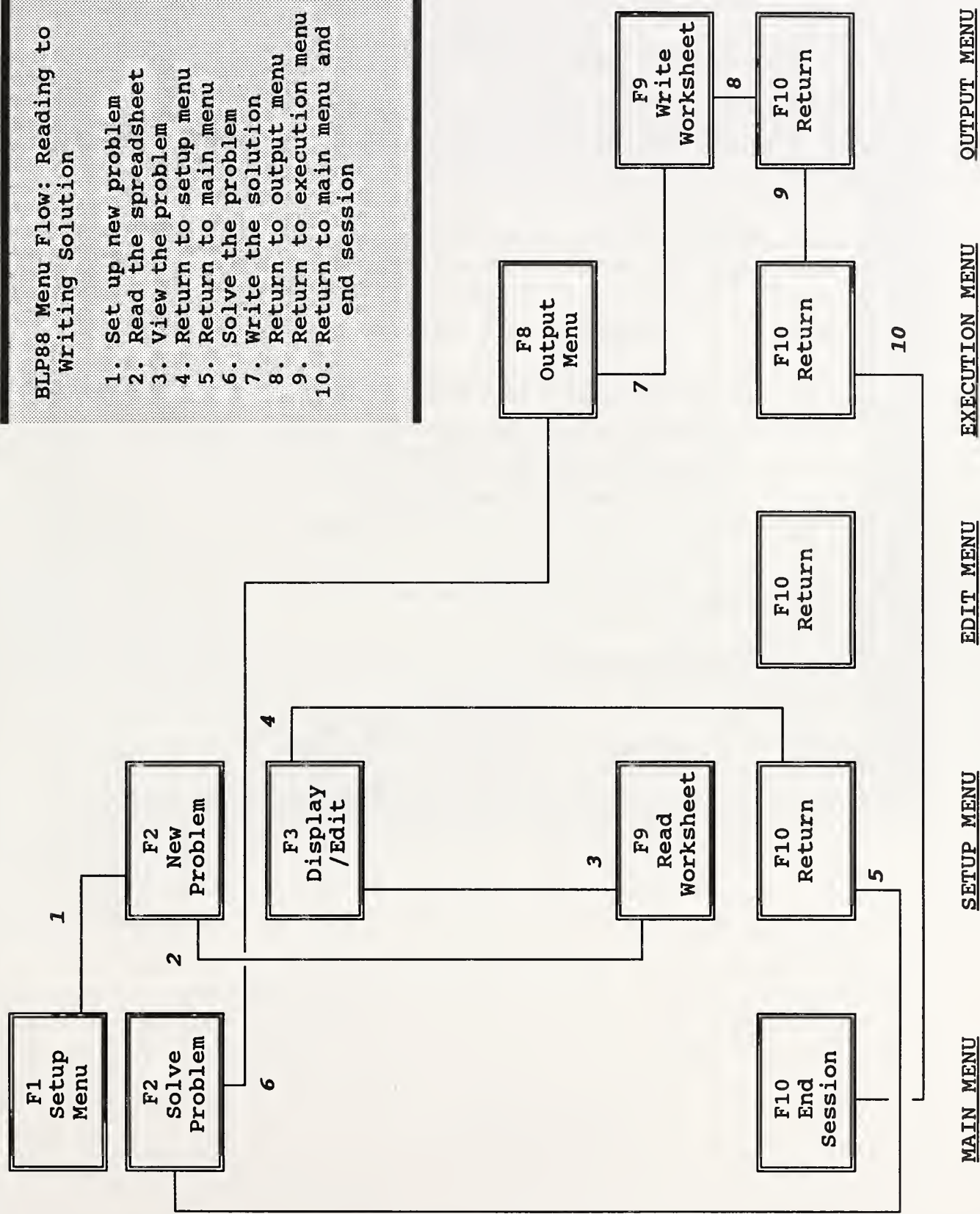


Figure 6 - Custom Menu Flow and Selection for SOLUTION.WK1

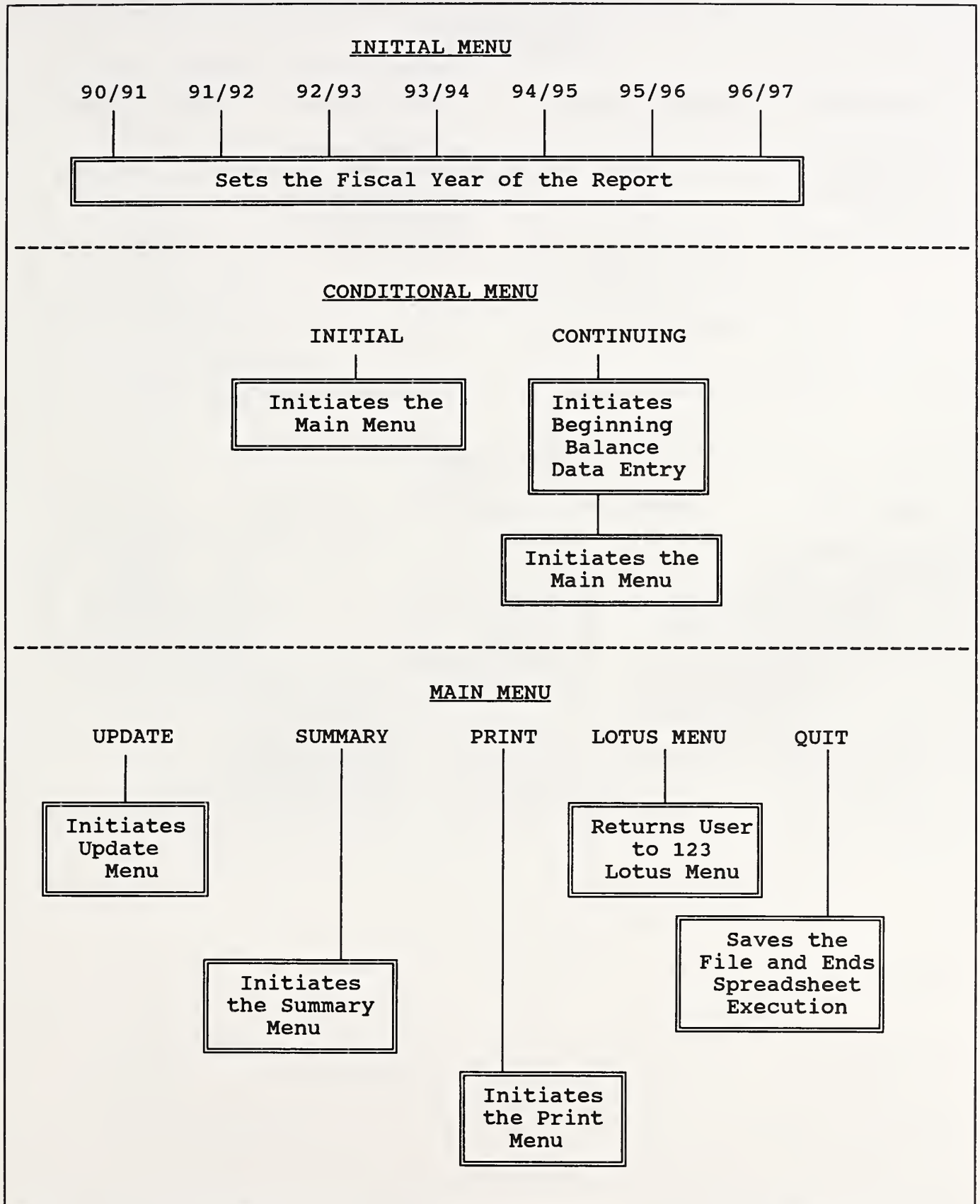


Figure 6 - Custom Menu Flow and Selection for SOLUTION.WK1 (continued)

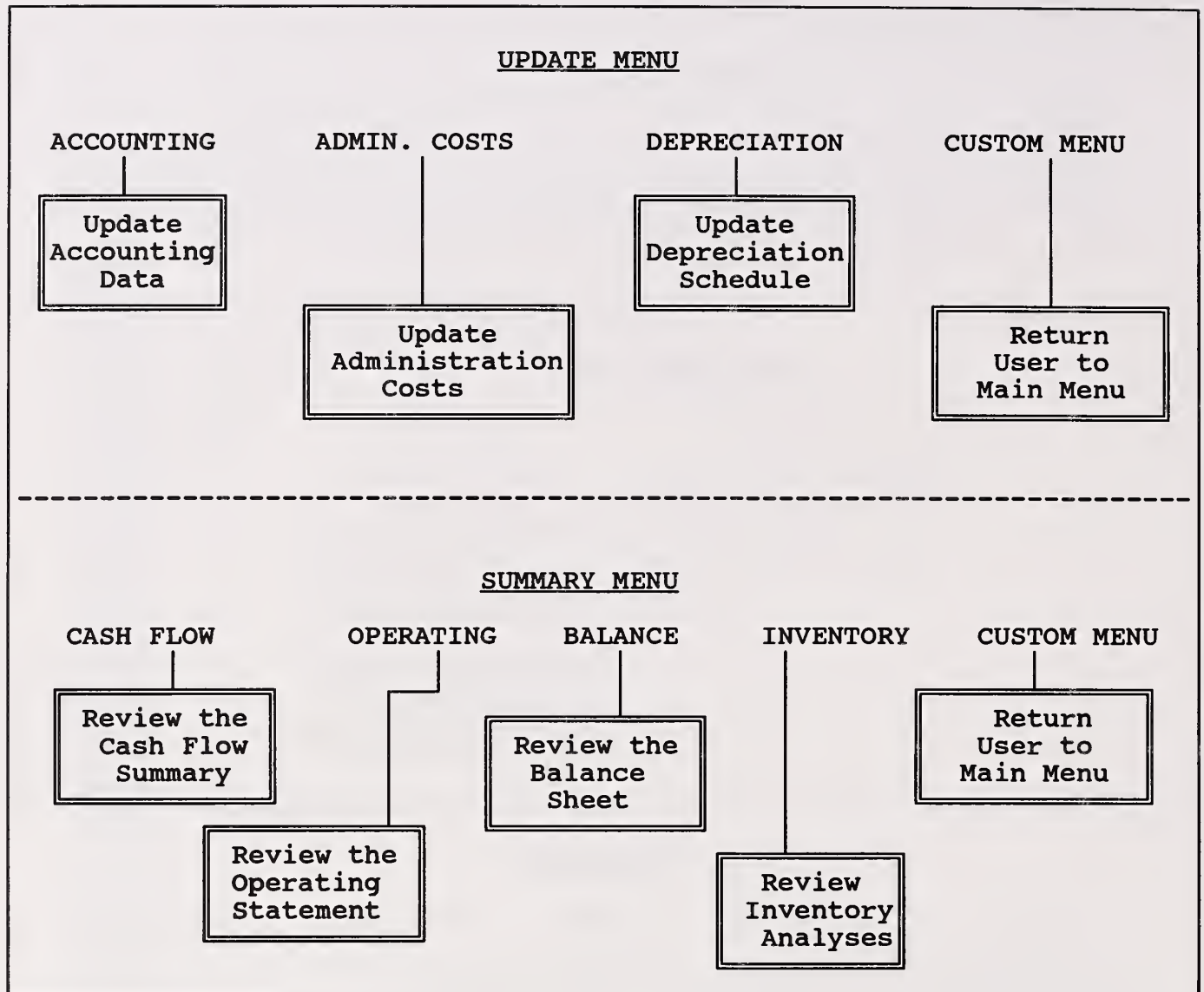


Figure 6 - Custom Menu Flow and Selection for SOLUTION.WK1 (continued)

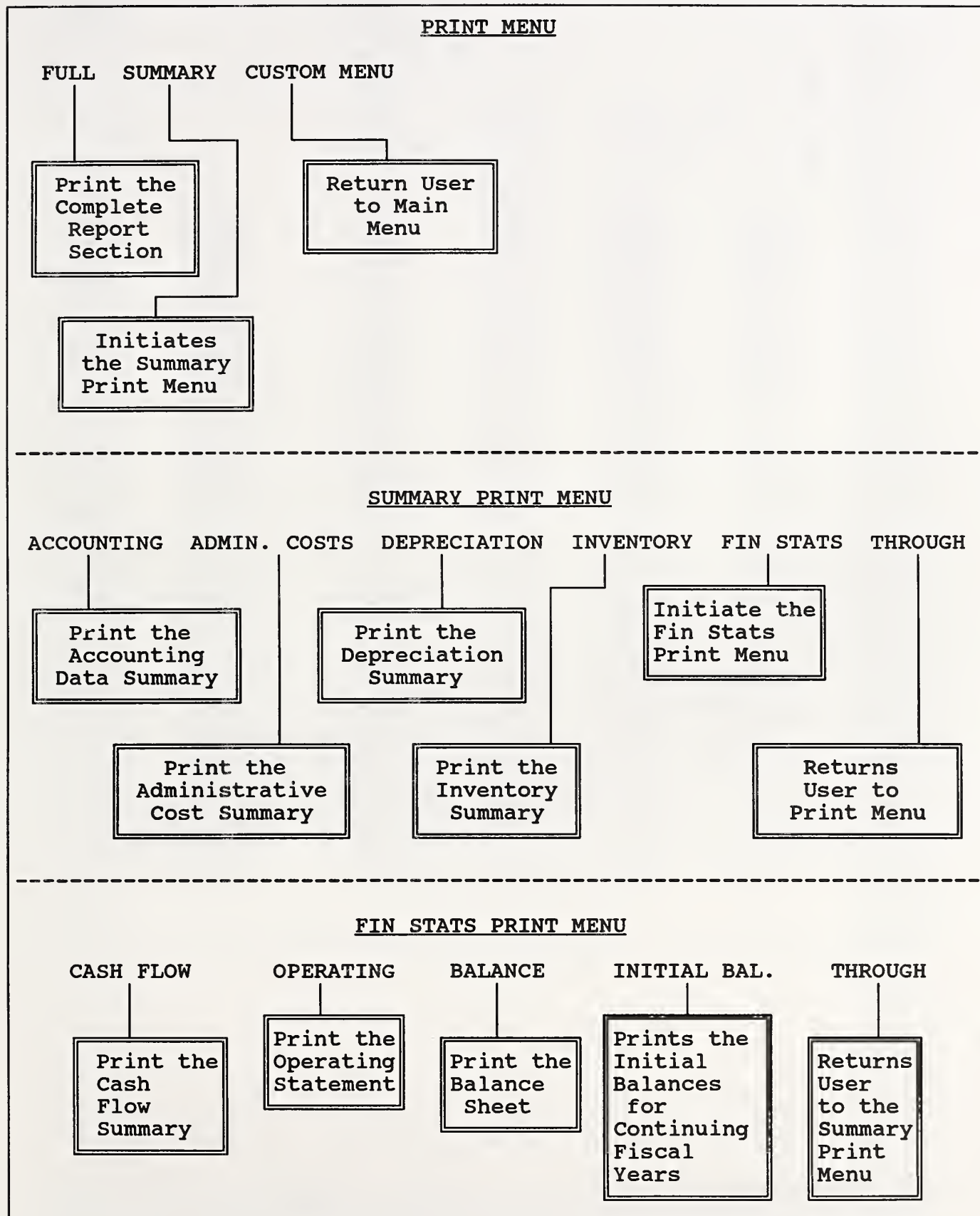


Figure 7 - Selected Coefficient Adjustment Table SCAT

	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB
3	(SCAT)										
4	SELECTED COEFFICIENT ADJUSTMENT TABLE										
5	PRODUCTION			QI	QII	QIII	QIV				PREVIOUS INVENTORY
6	DATA: FY	90		MEM 1	MEM 2	MEM 3	MEM 4	MEM 5	MEM 0		
7											
8	WEIGHTS QI:				90						---
9	STEER				704.67	704.67	704.67	704.67	704.67		CURRENT
10	HEIFER				637.33	637.33	637.33	637.33	637.33		
11											
12	SUPPLY QI:										
13	STEER				50	50	50	50	50		0
14	HEIFER				25	25	25	25	25		0
15											
16	PRICES QI:										
17	STEER				1.0%						CATTLE +
18	HEIFER										ONLY
19											SHIP&PROC
20											
21	WEIGHTS QII:										
22	STEER				691.67	691.67	691.67	691.67	691.67		
23	HEIFER				636.33	636.33	636.33	636.33	636.33		
24											
25	SUPPLY QII:										
26	STEER				10.00						
27	HEIFER				50	50	50	50	50		

** USDA/AMS data, AMARILLO AUCTION MEDIUM FRAME #1, BY WEIGHT

Figure 7 - Selected Coefficient Adjustment Table (SCAT) (Cont.)

	HR	HS	HT	HU	HV	HV	HX	HY	HZ	IA	IB
53											
54	PRICES QIV:										
55	STEER										
56	HEIFER										
57											
58											
59	PRICES QI:										
60	STEER, LIVE										
61	HEIFER, LIVE										
62	CARCASS										
63											
64	PRICES QII:										
65	STEER, LIVE										
66	HEIFER, LIVE										
67	CARCASS										
68											
69	PRICES QIII:										
70	STEER, LIVE										
71	HEIFER, LIVE										
72	CARCASS										
73											
74	PRICES QIV:										
75	STEER, LIVE										
76	HEIFER, LIVE										
77	CARCASS										

1.0% PAID TO MEMBERS UPON DELIVERY											
	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63	\$90.63
	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91	\$83.91

** USDA/AMS data, AMARILLO AUCTION MEDIUM FRAME #1, BY WEIGHT

CHOICE	SELECT	PEN SHRINK	
\$78.98	\$78.98	4.00%	TX NM direct
\$78.91	\$78.91	4.00%	TX NM direct
\$113.25	\$109.87	1.00%	Omaha carcass prices or Carcass price equivalent index, 550-700

** USDA source, Average price for Q1

CHOICE	SELECT		
\$78.29	\$78.29	4.00%	TX NM direct
\$78.10	\$78.10	4.00%	TX NM direct
\$113.74	\$105.35	1.00%	Omaha carcass prices or Carcass price equivalent index, 550-700

** USDA source, Average price for Q2

CHOICE	SELECT		
\$76.91	\$76.91	4.00%	TX NM direct
\$76.81	\$76.81	4.00%	TX NM direct
\$114.25	\$108.42	1.00%	Omaha carcass prices or Carcass price equivalent index, 550-700

** USDA source, Average price for Q3

CHOICE	SELECT		
\$80.73	\$80.73	4.00%	TX NM direct
\$80.70	\$80.70	4.00%	TX NM direct
\$121.81	\$112.34	1.00%	Omaha carcass prices or Carcass price equivalent index, 550-700

Figure 7 - Selected Coefficient Adjustment Table (SCAT') (Cont.)

[illegible]

Figure 7 - Selected Coefficient Adjustment Table (SCAT) (Cont.)

	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB
103	#6, HEIFER, SPRING				0	2.71	246.61	\$0.564	\$138.90	8.12	
104	#7, HEIFER, SUMMER				0	2.70	245.7	\$0.542	\$131.78	8.22	
105	#8, HEIFER, FALL				0	2.44	224.48	\$0.532	\$127.88	8.32	
106											
107	YARDAGE:										
108				Q I	Q II	Q III	Q IV				
109	FEE/DAY/HEAD			\$0.10	\$0.10	\$0.10	\$0.10				
110	DAYS IN LENGTH			91	91	91	92				
111											
112	PERCENT CHOICE:			Q I	Q II	Q III	Q IV				
113	STEERS			95%	95%	95%	95%				
114	HEIFERS			95%	95%	95%	95%				
115	CARCASSES			95%	95%	95%	95%				
116	TARGET WEIGHTS:			Q I	Q II	Q III	Q IV				
117	STEERS			1138	1100	1151	1142				
118	HEIFERS			993	981	1026	1038				
119											
120	CARCASS SALE:										
121				NO							
122				(YES OR NO, ONLY)							
123	DRESSING PERCENT:			Q I	Q II	Q III	Q IV				
124	STEER			63.5%	63.5%	63.5%	63.5%				
125	HEIFER			63.0%	63.0%	63.0%	63.0%				
126											
127	DEATH LOSS:			Q I	Q II	Q III	Q IV				

Figure 7 - Selected Coefficient Adjustment Table (SCAT) (Cont.)

	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB
153											
154	MILO \$/CWT			4.21	4.72	4.7	4.48	** +\$0.15/CWT TRANSP.			
155	CORN \$/CWT			4.95	5.61	5.14	4.77	** +\$0.15/CWT TRANSP.			
156	COTTON SD MEAL \$/CWT			13.6	15.9	13.1	13.4				
157	ALFALFA HAY \$/TON			134.33	130.33	139.33	138	** +\$30/TON TRANSP.			
158											
159	FEED ONLY \$/TON			116.92	128.90	121.78	117.88				
160											
161	FEED MKUP \$/TON			10	10	10	10				
162	FEED PLUS MKUP			126.92	138.90	131.78	127.88				
163											
164											
165											
166											
SOURCE: LIVESTOCK AND POULTRY SITUATION AND OUTLOOK											
RATION:				MILO	CORN	COT SD ML	ALF HAY				
PARTS:				15	15	4	8	42			

Figure 8 - Accounting Data, FY => 90/91

	Q I	Q II	Q III	Q IV
Other Sales	\$0.00	\$0.00	\$0.00	\$0.00
Other Income	\$0.00	\$0.00	\$0.00	\$0.00
Membership Fees (common shares)	\$6,000.00	\$0.00	\$0.00	\$0.00
Other Disbursements	\$0.00	\$0.00	\$0.00	\$0.00
Preferred Stock: beg. bal	\$0.00	\$0.00	\$0.00	\$0.00
sold	\$0.00	\$0.00	\$0.00	\$0.00
redeemed	\$0.00	\$0.00	\$0.00	\$0.00
Common Stock: beg bal	\$0.00	\$0.00	\$0.00	\$0.00
sold	\$0.00	\$0.00	\$0.00	\$0.00
redeemed	\$0.00	\$0.00	\$0.00	\$0.00
P.U.R.	\$5.00	\$5.00	\$5.00	\$5.00
Long-Term Debt Added	\$0.00	\$0.00	\$0.00	\$0.00
Long-Term Debt Retired	\$0.00	\$0.00	\$0.00	\$0.00
INTEREST RATES				
Working Loans	10.00%	10.00%	9.50%	8.67%
Cattle Loans	10.00%	10.00%	9.50%	8.67%
Long-Term Debt	9.00%	9.00%	9.00%	9.00%
Dividend Rate	8.00%	8.00%	8.00%	8.00%
% of Value for Cattle Loan	10.00%	10.00%	10.00%	10.00%
Patronage Refund Cash	30.00%	30.00%	30.00%	30.00%
Patronage Refund Allocated	50.00%	50.00%	50.00%	50.00%
Proportion of Total Cattle				
Paid As Initial Payment	1.00%	1.00%	1.00%	1.00%
Fed Tax Rate	15.00%			
State Tax Rate	6.00%			
Dividends Paid	\$0.00	\$0.00	\$0.00	\$0.00
Allocated Reserve	\$0.00	\$0.00	\$0.00	\$0.00
Interest Income				
Income Balance Receiving Interest	\$2,500.00			
Interest Rate on Balance	5.50%			

Figure 9 - Administration Costs, FY => 90/91

Item	Q I	Q II	Q III	Q IV
Wages				
Manager	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
Secretary/Bookkeeper	\$250.00	\$250.00	\$250.00	\$250.00
Employee Benefit	\$250.00	\$250.00	\$250.00	\$250.00
Office Supplies & Postage	\$100.00	\$100.00	\$100.00	\$100.00
Advertising & PR	\$100.00	\$100.00	\$100.00	\$100.00
Utilities	\$120.00	\$120.00	\$120.00	\$120.00
Telephone	\$300.00	\$300.00	\$300.00	\$300.00
Rent	\$450.00	\$450.00	\$450.00	\$450.00
Vehicle				
Operating Exp. (\$.2/mi)	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
Dues and Subscriptions	\$50.00	\$50.00	\$50.00	\$50.00
Property Tax	\$0.00	\$0.00	\$0.00	\$0.00
Maintenance & Repairs	\$0.00	\$0.00	\$0.00	\$0.00
Travel & Meetings	\$150.00	\$150.00	\$150.00	\$150.00
Legal Fees	\$1000.00	\$250.00	\$250.00	\$250.00
Accounting Fees	\$150.00	\$150.00	\$150.00	\$150.00
Insurance	\$75.00	\$0.00	\$75.00	\$0.00
Feed test	\$125.00	\$125.00	\$125.00	\$125.00
Other Expenses	\$0.00	\$0.00	\$0.00	\$0.00

DEPREC.SCHEDULE FY=>90/91

ASSET TYPE	PURCHASE	MONTHS OWNED		ACCUM.	Q I	Q II	Q III	Q IV
	PRICE	PRIOR YRS	CURRENT YR	DEPRC.				
OFFICE EQUIPMENT	4250	0	12	0	106.25	106.25	106.25	106.25
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
LAND PURCHASED	PURCHASE PRICE							
	0							
	0							
	0							
	0							
	0							
	0							
TOTAL	4250			0	106.25	106.25	106.25	106.25

Figure 11 - Inventory Worksheet, FY => 90/91

Period	I	II	III	IV
Beginning Inventory:				
Heavy steers:	\$0.00	\$173,463	\$180,227	\$186,776
Heavy heifers:	\$0.00	\$76,342	\$78,533	\$80,828
	-----	-----	-----	-----
	\$0	\$249,805	\$258,760	\$267,604
Additions to Inventory:				
Number				
Heavy steers:	299.97	299.95	299.97	299.98
Heavy heifers:	149.97	149.96	149.98	149.99
Total price				
Heavy steers:	\$173,057.71	\$180,373.63	\$186,668.38	\$187,500.51
Heavy heifers:	\$76,359.68	\$78,754.05	\$80,664.85	\$80,504.95
	-----	-----	-----	-----
	\$249,417.40	\$259,127.68	\$267,333.23	\$268,005.46
Transpo. costs on inventory				
heavy steers	\$1,187.89	\$1,187.82	\$1,187.87	\$1,187.91
heavy heifers	\$593.89	\$593.85	\$593.93	\$593.95
Total transpo.	\$1,781.77	\$1,781.66	\$1,781.80	\$1,781.86
Processing Costs				
heavy steers	\$899.92	\$899.86	\$899.90	\$899.93
heavy heifers	\$449.91	\$449.88	\$449.95	\$449.96
Total Processing Fees	\$1,349.83	\$1,349.74	\$1,349.85	\$1,349.89
Total Additions to Inventory				
heavy steers	\$175,145.52	\$182,461.31	\$188,756.14	\$189,588.35
heavy heifers	\$77,403.48	\$79,797.78	\$81,708.73	\$81,548.86
Total	\$252,549.00	\$262,259.09	\$270,464.87	\$271,137.21

Figure 11 - Inventory Worksheet (Cont.)

Subtraction From Inventory					
Heavy steers:		-----	SOLD DURING QUARTER		-----
		QI	QII	QIII	QIV
	Period I	0.00	297.09	0.00	0.00
	Period II		0.00	296.28	0.00
	Period III			0.00	296.82
	Period IV	0.00	0.00		0.00
TOTAL		0.00	297.09	296.28	296.82
Heavy Heifer:					
	Period I	0.00	147.92	0.00	0.00
	Period II		0.00	147.59	0.00
	Period III			0.00	148.37
	Period IV	0.00	0.00		0.00
TOTAL		0	147.92	147.585	148.365
Average Price Paid Per Quarter					
Heavy Steers:					
	Period I	\$576.91	\$576.91	\$576.91	\$576.91
	Period II		\$601.34	\$601.34	\$601.34
	Period III			\$622.30	\$622.30
	Period IV	\$0.00	\$0.00		\$625.05
Heavy Heifers:					
	Period I	\$509.16	\$509.16	\$509.16	\$509.16
	Period II		\$525.16	\$525.16	\$525.16
	Period III			\$537.83	\$537.83
	Period IV	\$0.00	\$0.00		\$536.75
Cost Of Goods Sold Cattle Only					
	Steers	\$0.00	\$171,395.18	\$178,164.39	\$184,710.45
	Heifers	\$0.00	\$75,312.84	\$77,506.20	\$79,795.08
Cost Of Goods Sold Other Inventoriable Costs, Only					
	Steers	\$0.00	\$2,067.75	\$2,062.11	\$2,065.87
	Heifers	\$0.00	\$1,029.49	\$1,027.19	\$1,032.62
Gross Margin					
	Cattle only	\$0.00	\$108,233.34	\$108,316.68	\$118,195.06
	Cattle + Inv. Costs	\$0.00	\$105,136.10	\$105,227.38	\$115,096.57

Figure 11 - Inventory Worksheet (Cont.)

Deductions from inventory value:				
Death cost				
heavy steers	\$1,682.59	\$2,234.81	\$1,979.83	\$1,616.56
heavy heifers	\$1,061.16	\$1,264.39	\$881.02	\$759.42
Total death costs	\$2,743.75	\$3,499.20	\$2,860.85	\$2,375.98
from inventory value:				
Ending Inventory Value:				
Heavy steers:	\$173,463	\$180,227	\$186,776	\$187,972
Heavy heifers:	\$76,342	\$78,533	\$80,828	\$80,789
Total Ending				
Inventory:	\$249,805	\$258,760	\$267,604	\$268,761
Fourth-Quarter Carryover Stocks:				
Average Weights				
Steer	939.91		939.91	
Heifer	864.15		864.150000001	
Number				
Steer	297.42		297.42	
Heifer	148.59		148.59	
	CATTLE	CATTLE +	CATTLE	CATTLE +
Investment	ONLY	SHIP & PROC	ONLY	SHIP & PROC
Steer	\$625.05	\$632.01	\$625.05	\$632.01
Heifer	\$536.75	\$543.71	\$536.75	\$543.71

Figure 12 - Pro Forma Quarterly Cash Flow, FY => 90/91

Item	Q I	Q II	Q III	Q IV
CASH RECEIVED:				
Sale of Cattle				
Certified	\$0	\$338,039	\$346,655	\$364,477
Non-Certified	\$0	\$16,902	\$17,333	\$18,224
Other Sales	\$0	\$0	\$0	\$0
Other Income	\$0	\$0	\$0	\$0
Preferred Stock	\$0	\$0	\$0	\$0
Common Stock	\$0	\$0	\$0	\$0
Nominating Fees	\$4,499	\$4,499	\$4,499	\$4,500
Member Shares	\$6000	\$0	\$0	\$0
Operating Loans				
Working Capital	\$40,935	\$32,585	\$29,590	\$16,809
Cattle	\$24,942	\$25,913	\$26,733	\$26,801
Long-Term Debt	\$0	\$0	\$0	\$0
Interest Income	\$0	\$0	\$0	\$164
P.U.R. (\$5/hd sold)	\$0	\$2,225	\$2,219	\$2,226
TOTAL CASH RECEIVED	\$76,376	\$420,163	\$427,029	\$433,036
CASH DISBURSED:				
Office Equipment	\$4,250	\$0	\$0	\$0
Wages				
Manager	\$1,000	\$1,000	\$1,000	\$1,000
Secretary/Bookkeeper (p/t)	\$250	\$250	\$250	\$250
Employee Benefits	\$250	\$250	\$250	\$250
Office Supplies	\$100	\$100	\$100	\$100
Advertising & PR	\$100	\$100	\$100	\$100
Utilities	\$120	\$120	\$120	\$120
Telephone	\$300	\$300	\$300	\$300
Rent	\$450	\$450	\$450	\$450
Vehicle				
Operating Expense (\$.2/mi)	\$1,000	\$1,000	\$1,000	\$1,000
Dues & Subscriptions	\$50	\$50	\$50	\$50
Property Tax	\$0	\$0	\$0	\$0
Maintenance & Repairs	\$0	\$0	\$0	\$0
Travel & Meetings	\$150	\$150	\$150	\$150
Legal Fees	\$1000	\$250	\$250	\$250
Accounting Fees	\$150	\$150	\$150	\$150
Insurance	\$75	\$0	\$75	\$0
Feed test	\$0	\$0	\$0	\$0
Other Expenses	\$0	\$0	\$0	\$0
Working Capital Loan Payment				
Principal	\$0	\$40,935	\$32,585	\$29,590
Interest	\$0	\$987	\$786	\$679

Figure 12 - Pro Forma Quarterly Cash Flow (Cont.)

Item	Q I	Q II	Q III	Q IV
Long-Term Debt				
Principal	\$0	\$0	\$0	\$0
Interest	\$0	\$0	\$0	\$0
SUBTOTAL OPERATING DISBURSEMENTS	\$9,245	\$46,092	\$37,615	\$34,439
CATTLE OPERATING DISBURSEMENTS				
Payments to Producers				
Initial Payment	\$2,494	\$2,591	\$2,680	\$2,680
Final Payment	\$2,682	\$247,663	\$255,913	\$264,185
Premium Paid	\$0	\$0	\$0	\$0
Processing Costs	\$1,350	\$1,350	\$1,350	\$1,350
Cattle Loan				
Principal	\$0	\$24,942	\$25,913	\$26,733
Interest/Qtr	\$0	\$601	\$625	\$613
Transport Cost	\$1,782	\$1,782	\$1,782	\$1,782
Vet Fees	\$1,350	\$1,350	\$1,350	\$1,350
Yard Fees Steer	\$0	\$0	\$0	\$0
Yard Fees Heifer	\$0	\$0	\$0	\$0
Feed Costs Steer	\$38,910	\$64,117	\$68,534	\$69,015
Feed Costs Heifer	\$17,563	\$29,675	\$31,274	\$30,888
SUBTOTAL TOTAL CATTLE	\$66,131	\$374,071	\$389,414	\$398,597
OTHER DISBURSEMENTS				
Taxes				
Income Tax Federal				\$0
Income Tax State				\$0
Stock Redemption				
Preferred	\$0	\$0	\$0	\$0
Common	\$0	\$0	\$0	\$0
Cash Patron Refund				\$0
Total Stock Dividends	\$0	\$0	\$0	\$0
Other Disbursements	\$0	\$0	\$0	\$0
SUBTOTAL OTHER	\$0	\$0	\$0	\$0
TOTAL DISBURSEMENTS	\$75,376	\$420,163	\$427,029	\$433,036
Net Cash Flow	\$1,000	\$0	\$0	\$0
Beginning Cash Balance	\$0	\$1,000	\$1,000	\$1,000
Ending Cash Balance	\$1,000	\$1,000	\$1,000	\$1,000

Figure 13 - Pro Forma Operating Statement, FY => 90/91

Item	Q I	Q II	Q III	Q IV
Livestock Sales				
Certified Cattle	\$0	\$338,039	\$346,655	\$364,477
Non-Certified Cattle	\$0	\$16,902	\$17,333	\$18,224
Other Cattle	\$0	\$0	\$0	\$0
Less:				
Cost of Cattle Sold	\$0	\$246,708	\$255,671	\$264,506
Other Cattle Costs	\$0	\$3,097	\$3,089	\$3,098
Premium Paid	\$0	\$0	\$0	\$0
Gross Margins	\$0	\$105,136	\$105,227	\$115,097
Income:				
Nomination Fees	\$4,499	\$4,499	\$4,499	\$4,500
Interest Income	\$0	\$0	\$0	\$0
Subtotal Income	\$4,499	\$4,499	\$4,449	\$4,500
Total Income + G.M.	\$4,499	\$109,635	\$109,727	\$119,596
Expenses:				
Operating Expenses				
Wages				
Manager	\$1,000	\$1,000	\$1,000	\$1,000
Secretary/Bookkeeper	\$250	\$250	\$250	\$250
Employee Benefits	\$250	\$250	\$250	\$250
Office Supplies	\$100	\$100	\$100	\$100
Advertising & PR	\$100	\$100	\$100	\$100
Utilities	\$120	\$120	\$120	\$120
Telephone	\$300	\$300	\$300	\$300
Rent	\$450	\$450	\$450	\$450
Vehicle				
Operating Expense	\$1,000	\$1,000	\$1,000	\$1,000
Dues & Subscriptions	\$50	\$50	\$50	\$50
Property Tax	\$0	\$0	\$0	\$0
Maintenance & Repairs	\$0	\$0	\$0	\$0
Travel & Meetings	\$150	\$150	\$150	\$150
Legal Fees	\$1000	\$250	\$250	\$250
Accounting Fees	\$150	\$150	\$150	\$150
Insurance	\$38	\$38	\$38	\$38
Other Expenses	\$0	\$0	\$0	\$0
Interest Expense				
Working Capital	\$987	\$786	\$679	\$353
Long-Term Debt	\$0	\$0	\$0	\$0

Figure 13 - Pro Forma Operating Statement (Cont.)

Item	Q I	Q II	Q III	Q IV
Dividends	\$0	\$0	\$0	\$0
Depreciation Equip	\$106	\$106	\$106	\$106
Total Operating Expenses	\$6,051	\$5,099	\$4,993	\$4,667
Cattle Expenses				
Cattle Loan				
Int. Expense	\$601	\$625	\$613	\$563
Yard Fees	\$0	\$0	\$0	\$0
Feed Costs	\$56,473	\$93,792	\$99,808	\$99,903
Death Loss	\$2,744	\$3,499	\$2,861	\$2,376
Feed Test	\$0	\$0	\$0	\$0
Vet Expenses	\$1,350	\$1,350	\$1,350	\$1,350
Total Cattle Expenses	\$61,168	\$99,265	\$104,632	\$104,192
Total Expense	\$67,219	\$104,365	\$109,625	\$108,859
Net Income	(\$62,720)	\$5,270	\$102	\$10,738
Allocation of Net Margins				
Cash Refund Payable	\$0	\$0	\$0	\$0
Allocated Reserve	\$0	\$0	\$0	\$0
Unallocated Reserve	(\$62,720)	(\$57,450)	(\$57,348)	(\$46,610)
Tax on Unallocated Reserve				
Federal				\$0
State				\$0
Total Tax on Unallocated Reserve				\$0

Figure 14 - Pro Forma Balance Sheet, FY => 90/91

Item	Q I	Q II	Q III	Q IV
ASSETS				
Current:				
Cash	\$1,000	\$1,000	\$1,000	\$1,000
Inventory				
Cattle	\$249,805	\$258,760	\$267,604	\$268,761
Pre-Paid Expense	\$38	\$0	\$38	\$0
Total Current Assets	\$250,843	\$259,760	\$268,642	\$269,761
Fixed Assets:				
P.P. & E.	\$4,250	\$4,250	\$4,250	\$4,250
Less Depreciation				
Total Fixed Assets	\$4,144	\$4,038	\$3,931	\$3,825
Total Assets	\$254,987	\$263,797	\$272,573	\$273,586
LIABILITIES				
Current Liabilities:				
Producer Payments	\$244,241	\$253,114	\$261,860	\$263,000
Operating Loan Payable	\$40,935	\$32,585	\$29,590	\$16,809
Operating Loan Int.	\$987	\$786	\$679	\$353
Cattle Loan Payable	\$24,942	\$25,913	\$26,733	\$26,801
Int. On Cattle Loan	\$601	\$625	\$613	\$563
Patronage Refunds	\$0	\$0	\$0	\$0
Income Tax Payable	\$0	\$0	\$0	\$0
Total Current Liabilities	\$311,706	\$313,022	\$319,476	\$307,526
Long Term:				
Debt	\$0	\$0	\$0	\$0
Interest	\$0	\$0	\$0	\$0
TOTAL LIABILITIES	\$311,706	\$313,022	\$319,476	\$307,526

Figure 14 - Pro Forma Balance Sheet (Cont.)

Item	Q I	Q II	Q III	Q IV
Net Worth:				
Membership Shares	\$6000	\$6000	\$6000	\$6000
Preferred Stock	\$0	\$0	\$0	\$0
Common Stock	\$0	\$0	\$0	\$0
P.U.R.	\$0	\$2,225	\$4,444	\$6,670
Allocated Reserve	\$0	\$0	\$0	\$0
Unallocated Reserve	(\$62,720)	(\$57,449)	(\$57,348)	(\$46,610)
Total Net Worth	(\$56,720)	(\$49,224)	(\$46,903)	(\$33,940)
Total Liabilities				
+ Net Worth	\$254,987	\$263,797	\$272,573	\$273,586

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Agricultural Cooperative Service (ACS) provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The agency (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.

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